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10/542,965

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Shinya Adachi

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EXAMINER

PARK, SOO JIN

ART UNIT

PAPER NUMBER

2624

NOTIFICATION DATE

DELIVERY MODE

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/542,965 | ADACHI ET AL. | |
| | Examiner | Art Unit | |
| | SOO JIN PARK | 2624 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/21/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. All the amendments to the drawings filed on 09/29/2005 have been entered and the action follows:

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 2, 6-10, 12, 15-20, and 23** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding **claim 2**, there is insufficient antecedent basis for the limitations and “the number of nodes” in the claim.

Regarding each of **claim 6**, there is insufficient antecedent basis for the limitation “the number of nodes” in the claims.

In addition, there is “another shape information” in claim 1 and “another shape information” in claim 6. It is unclear which of the two “the other shape information” of claim 6 refers to.

Regarding each of **claim 7**, there is insufficient antecedent basis for the limitation “the number of nodes” in the claims.

In addition, in claim 1, there is “a second node or a subsequent node” represented with a relative location and a “starting-end location” represented with a relative location. It is unclear which of the two “the shape information represented by the relative location” of claim 7 refers to.

In addition, there is "another shape information" in claim 1 and "another shape information" in claim 7. It is unclear which of the two "the other shape information" of claim 7 refers to.

Regarding **claim 8**, there is "another shape information" in claim 1 and "another shape information" in claim 6. It is unclear which of the two "the other shape information" of claim 8 refers to.

Regarding **claim 9**, there is "another shape information" in claim 1 and "another shape information" in claim 9. It is unclear which of the two "the other shape information" of claim 9 refers to.

Regarding **claim 10**, there is "another shape information" in claim 1 and "another shape information" in claim 10. It is unclear which of the two "the other shape information" of claim 10 refers to.

Regarding **claim 12**, the phrase "any one of" is indefinite because it suggests that a limitation may be included or excluded in the scope of subject matter protected by the claims. For the purposes of examination, the Examiner has considered the broadest interpretation of "any one of". Specifically, this includes any condition comprising at least one of the disclosed limitations.

Regarding **claim 15**, there is insufficient antecedent basis for the limitation "the shape information represented by the relative location" in the claim.

Regarding each of **claims 16-19**, there is insufficient antecedent basis for the limitation "The shape information decoding method according to claim 14" in the claims.

For the purposes of examination, claims 16-19 are considered as dependent claims of claim 15.

Regarding each of **claims 16 and 23**, there is insufficient antecedent basis for the limitation "the number of nodes".

Regarding **claim 20**, the phrase "any one of" is indefinite because it suggests that a limitation may be included or excluded in the scope of subject matter protected by the claims. For the purposes of examination, the Examiner has considered the broadest interpretation of "any one of". Specifically, this includes any condition comprising at least one of the disclosed limitations.

Regarding **claim 23**, there is "another shape information" in claim 1 and "another shape information" in claim 7. It is unclear which of the two "the other shape information" of claim 23 refers to.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-7, 9, 10, and 12-14** are rejected under 35 U.S.C. 102(b) as being anticipated by Ito et al (USPN 6,249,740).

Regarding **claim 1**, Ito discloses:

a step of representing, concerning a coordinate string including a plurality of nodes corresponding to the shape information (see figure 4), location information of a subsequent node thereto with a relative location to a starting-end location, using location information of the starting-end location (see column 9 line 22, column 11 lines 50-57, column 12 lines 1-3, and figures 2(a), 4 and 5, subsequent nodes C4 and C5 are represented by a relative location from node C3 by roads R4 and R5, wherein lengths of the roads R4 and R5 are the distance of the relative location); and

a step of representing the location information of the starting-end location with a relative location using another shape information (see figures 4 and 5, C3 is represented by roads R1 and R2 from a point PD, wherein R1, R2, R3, and Rc form a separate road information).

Regarding **claim 2**, Ito further discloses the relative location of the starting-end location is represented by the number of nodes from a reference point of the other shape information (see figures 4 and 5, C3 is represented by nodes C1 and C2 and roads R1 and R2 from a point PD, wherein C1, C2, R1, R2, R3, and Rc form a separate road information).

Regarding **claim 3**, Ito further discloses the relative location of the starting-end location is represented by a distance from a reference point of the other shape information (see column 9 line 22 and figures 4 and 5, C3 is represented by roads R1 and R2 from a point PD, wherein length of roads are identified).

Regarding **claim 4**, Ito further discloses the relative location of the starting-end location is represented by a reference point of the other shape information (see figures 4 and 5, C3 is represented relative to PD by R1, C1, R2, C2, and R3).

Regarding **claim 5**, Ito further discloses the relative location of the starting-end location is represented by a relative coordinate of the other shape information from a reference point (see column 9 line 22 and figures 4 and 5, C3 is represented by roads R1 and R2 from a point PD, wherein length of roads represent relative coordinate difference).

Regarding **claim 6**, Ito further discloses identifying information of another shape information that is to be referenced (see figures 4 and 5, road containing PD, R1, C1, R2, C2, R3, C3, and Rc), the number of nodes of the other shape information from a reference point (see figure 4, C1 and C2 from a point PD), and a deviation angle from an orientation in the other shape information (see column 12 lines 42-43, angle θ_h).

Regarding **claim 7**, Ito further discloses the shape information represented by the relative location is arranged so as to follow another shape information that is to be referenced (see figures 4 and 5, C3, R4, and C4 are arranged to branch out from a road containing PD, R1, C1, R2, C2, R3, C3, and Rc), the location information of the starting-end location includes the number of nodes of the other shape information from a reference point and a deviation angle from an orientation in the other shape information (see column 12 lines 42-43, figures 4 and 5, C3 is represented relative to PD by R1, C1, R2, C2, and R3 and angle θ_h is defined).

Regarding **claim 9**, Ito further discloses the location information of the starting-end location includes identifying information of another shape information that is referenced (see figures 4 and 5, a road containing PD, R1, C1, R2, C2, R3, C3, and Rc), identifying information indicating a starting-end location (see column 12 lines 7-10, judging whether C3 is in intersection to make a turn), and an absolute orientation of the starting-end location (see column 12 lines 42-43, angle θ_h is defined).

Regarding **claim 10**, Ito further discloses the location information of the starting-end location includes identifying information of another shape information that is referenced (see figures 4 and 5, a road containing PD, R1, C1, R2, C2, R3, C3, and Rc), identifying information indicating a starting-end location (see column 12 lines 7-10, judging whether C3 is in intersection to make a turn), relative location information to the starting-end location (see figure 4, C3 is represented relative to PD by R1, C1, R2, C2, and R3), and an absolute orientation of the starting-end location (see column 12 lines 42-43, angle θ_h is defined).

Regarding **claim 12**, Ito discloses everything claimed as applied above (see claim 1), and further discloses a computer readable recording medium storing a program (see column 8 line 66 through column 9 line 8). In addition, claim 12 describes a computer readable recording medium storing a program for causing a computer execute a method not patentably distinct from the method described in claim 1, thus claim 12 is interpreted and rejected for the same reasons as stated above in the rejection of claim 1.

Regarding **claim 13**, Ito discloses everything claimed as applied above (see claim 1), and further discloses an apparatus (see column 8 line 51 to column 9 line 50 and figure 1). In addition, claim 13 describes an apparatus not patentably distinct from the method described in claim 1, thus claim 13 is interpreted and rejected for the same reasons as stated above in the rejection of claim 1.

Regarding **claim 14**, Ito discloses everything claimed as applied above (see claim 1), and further discloses a device (see column 8 line 51 to column 9 line 50 and figure 1). In addition, claim 14 describes a device not patentably distinct from the method described in claim 1, thus claim 14 is interpreted and rejected for the same reasons as stated above in the rejection of claim 1.

4. **Claims 15 and 20-22** are rejected under 35 U.S.C. 102(b) as being anticipated by Hessing et al (WO 01/18769). Hessing et al (USPN 6,687,611), hereinafter referenced as Hessing2, is used as a translation for Hessing et al (WO 01/18769).

Regarding **claim 15**, Hessing2 discloses:

a step of decoding the other shape information (see column 3 lines 9-17, column 4 lines 53-54, column 4 lines 53-54, and figure 7, receiving and decoding coded location information present in a database of a receiver, such as streets 14 and 17);

a step of identifying the starting-end location represented by the relative location, using the decoded other shape information (see column 4 lines 49-63 and figure 7, identifying location information not present in the database, such as a point 15 which is

a starting point of a traffic jam, with the information present in the database, such as the streets 14 and 17, by a relative location, such as coordinate chain 18); and

a step of decoding the shape information represented by the relative location based on the location information of the starting-end location (see column 4 lines 49-63 and figure 7, traffic jam points 15 and 16 are decoded).

Regarding **claim 20**, Hessing2 discloses everything claimed as applied above (see claim 15). In addition, claim 20 describes a computer readable recording medium storing a program for causing a computer to execute a method not patentably distinct from the method described in claim 15, thus claim 20 is interpreted and rejected for the same reasons as stated above in the rejection of claim 15.

Regarding **claim 21**, Hessing2 discloses everything claimed as applied above (see claim 15), and further discloses an apparatus (see column 4 line 64 through column 5 lines 64-65, column 7 lines 4-5, and figure 8). In addition, claim 21 describes an apparatus not patentably distinct from the method described in claim 15, thus claim 21 is interpreted and rejected for the same reasons as stated above in the rejection of claim 15.

Regarding **claim 22**, Hessing2 discloses everything claimed as applied above (see claim 15), and further discloses a device (see column 4 line 64 through column 5 lines 64-65, column 7 lines 4-5, and figure 8). In addition, claim 22 describes a device not patentably distinct from the method described in claim 15, thus claim 22 is interpreted and rejected for the same reasons as stated above in the rejection of claim 15.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 8 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito.

Regarding **claim 8**, Ito further discloses the location information of the starting-end location includes at least the number of nodes of the other shape information from the reference point (see figure 4, C3 is represented relative to PD by C1 and C2).

Ito fails to explicitly disclose when an orientation from a node of the starting-end location toward a next node matches an orientation in the other shape information, the location information of the starting-end location omits the deviation angle from the orientation in the other shape information.

Ito suggests when an orientation from a node of the starting-end location toward a next node matches an orientation in the other shape information, the location information of the starting-end location omits the deviation angle from the orientation in the other shape information (see column 8 lines 23-24, column 8 lines 31-35, column 12 lines 16-23, column 12 lines 41-49, and figure 4, when the angle θ_h between R4 (orientation of C3 towards C4) is greater than a threshold, C3 is judged as a straight path or a gently curving path and data is simplified).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize simplifying data of a straight path or a gently curving path, as suggested by Ito, for the purpose of reducing the amount of data to be transmitted (see Ito column 2 lines 59-63).

Regarding **claim 23**, Ito discloses everything claimed as applied above (see claims 7 and 8).

6. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ito in view of Adachi (WO 02/46697). Adachi (USPAPN 2003/0078720), hereinafter referenced as Adachi2, is used as a translation for Adachi (WO 02/46697).

Regarding **claim 11**, Ito further discloses a step of resampling nodes of the other shape information, and a step of correcting the starting-end location so that the starting-end location corresponds to one of the resampled nodes (column 2 lines 32-45 and column 16 lines 40-43, a new route is searched, wherein in case the new route contains turning in an intersection, the intersection is a newly adjusted starting-end location).

Ito fails to disclose resampling nodes of the other shape information at equal intervals.

In a similar field of endeavor, Adachi2 teaches a step of resampling nodes of the other shape information at equal intervals (see paragraph [0110], resampling at constant intervals).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ito with Adachi2, which is in a similar field of

endeavor of transmitting position information of a digital map, and resample in constant intervals, as taught by Adachi2, and have a newly adjusted intersection to turn, as disclosed by Ito, for the purpose of representing map information with fewer nodes for reducing excessive number of nodes.

7. **Claims 16-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hessing et al (WO 01/18769) in view of Ito. Hessing et al (USPN 6,687,611), hereinafter referenced as Hessing2, is used as a translation for Hessing et al (WO 01/18769).

Regarding **claim 16**, Hessing2 discloses everything claimed as applied above (see claim 15), however, Hessing2 fails to disclose the starting-end location represented by the relative location is identified by the number of nodes from a reference point of the other shape information.

In a similar field of endeavor, Ito teaches the starting-end location represented by the relative location is identified by the number of nodes from a reference point of the other shape information (see the rejection of claim 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Hessing2 with Ito, which is in a similar field of endeavor of transmitting position information of a digital map, and represent an intersection by a number of other intersections from a reference point of another road, as taught by Ito, for the purpose of reducing the amount of data to be transmitted (see Ito column 3 lines 59-63).

Regarding **claim 17**, Hessing2 discloses everything claimed as applied above (see claim 15), however, Hessing2 fails to disclose the starting-end location represented by the relative location is identified by a distance from a reference point of the other shape information.

In a similar field of endeavor, Ito teaches the starting-end location represented by the relative location is identified by a distance from a reference point of the other shape information (see the rejection of claim 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to represent an intersection by roads with identified lengths from a reference point of another road, as taught by Ito, for the purpose of reducing the amount of data to be transmitted (see Ito column 3 lines 59-63).

Regarding **claim 18**, Hessing2 discloses everything claimed as applied above (see claim 15), however, Hessing2 fails to disclose the starting-end location represented by the relative location is identified by a reference point of the other shape information.

In a similar field of endeavor, Ito teaches the starting-end location represented by the relative location is identified by a reference point of the other shape information (see the rejection of claim 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to represent an intersection by a relative location from a reference point of another road, as taught by Ito, for the purpose of reducing the amount of data to be transmitted (see Ito column 3 lines 59-63).

Regarding **claim 19**, Hessing2 discloses everything claimed as applied above (see claim 15), however, Hessing2 fails to disclose the starting-end location represented by the relative location is identified by a relative coordinate from a reference point of the other shape information.

In a similar field of endeavor, Ito teaches the starting-end location represented by the relative location is identified by a relative coordinate from a reference point of the other shape information (see the rejection of claim 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to represent an intersection by roads with identified lengths from a reference point of another road wherein the lengths of the roads represent relative coordinate difference, as taught by Ito, for the purpose of reducing the amount of data to be transmitted (see Ito column 3 lines 59-63).

Citation of Pertinent Art

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Adachi (USPAPN 2003/0004636) discloses transmitting position and shape on a digital map.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SOO JIN PARK whose telephone number is 571-270-3569. The examiner can normally be reached on Monday - Friday 9:00 - 5:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SOO JIN PARK
Examiner
Art Unit 2624

SJP
September 26, 2008

/Vikkram Bali/
Supervisory Patent Examiner, Art Unit 2624